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09/932,459	08/20/2001	Seung June Yi	HI-035A	3386

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EXAMINER

PHAN, TRI H

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,459

Applicant(s)

YI ET AL.

Examiner

Tri H. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11,30-39,41-52,54 and 55 is/are pending in the application.
- 4a) Of the above claim(s) 1-10,12-29,40 and 53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 11,30-39,41-52,54 and 55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on June 1st, 2005. Claims 1-10, 12-29, 40 and 53 are now canceled. Claims 11, 30-39, 41-52, and 54-55 are now pending in the application.

Drawings

2. The corrected or substitute drawings were received on June 1st, 2005. These drawings are acceptable by the Examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11, 30-39, 41-52, and 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over **ETSI TS 125 322 v.3.1.2 (2000-01)** ([“Universal Mobile Telecommunications System (UMTS); RLC Protocol Specification (3G TS 25.322 version 3.1.2 Release 1999 (XP-002168713)]]; hereinafter the “**TS 125 322 v.3.1.2**” reference) in view of **ETSI EN 301 349 v.7.5.0 (2000-07)** ([“Digital cellular Telecommunications System (Phase 2+); General Packet

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Data Service, Mobile Station-Base Station System Interface; Radio link Control/Medium Access Control Protocol" GSM 04.60 version 7.5.0 Release 1998 (XP-002236190)]; hereinafter the "EN 301 349 v.7.5.0" reference").

- In regard to claim 11, TS 125 322 v.3.1.2 discloses in Figs. 4.1-4.4 and in the respective portions of the specification about the system and method for RLC construction model with the transmitting and receiving entities for transparent, unacknowledged and acknowledge mode service; wherein the transmitting Tr-entity receives SDUs from the higher layers through the Tr-SAP, UM-SAP, or AM-SAP for segmenting the SDUs into appropriate size sequence RLC PDUs (*"detecting that the last segment of the service data unit 'SDU' ends at the end of the previous PDU"*); For example see Figs. 4.1-4.4 page 9, section 4.2.1: Model of RCL through page 14, section 4.2.1.3: Acknowledge mode entity) with fields in the header such as Data/Control, Sequence Number, Polling bit, Length Indicators or 'LI' (*"first/second length indicators"*), Extension bit, Header Extension Type, etc..., in octet-aligned (For example see Figs. 9.2-9.3; page 20; page 22, Section 9.2.2: Parameters through page 24, Section 9.2.2.10 Padding 'PAD') and wherein the next Length Indicator in the next PDU has value LI = "0" (*"first indicator"*) or LI = "111 1111 1111 1011" (*"second indicator"*) depends on the end of last segment of the SDU that exactly ends of a PDU or one octet short (*"checking whether the previous PDU has the first length indicator indicating the end of the last segment of the SDU"*) as disclosed in Section 9.2.2.8: Length Indicator 'LI', page 23. TS 125 322 v.3.1.2 does disclose about the use of the next LI in the next PU, when the last segment of the RLC SDU is one octet short of exactly filling the last RLC PU, but fails to explicitly provide where the *"second length indicator"*

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indicating SDU inserting in the current PDU". However, such implementation is known in the art.

For example, **EN 301 349 v.7.5.0** discloses about the use of the Length Indicator where the LLC PDU boundary is extended into the next RLC data block 'N+1', indicated the end of the LLC PDU 1 in the RCL data block N+1 ("*inserting in the current PDU the second length indicator indicating SDU ends at the end of the previous PDU according to the checking result only if the previous PDU does not have the first indicator*"; For example see section B.2: Example 2, Fig. B.2) and where the Length Indicator can be used when the end of the LLC PDU fits precisely into the RCL data block (For example see section B.3: Example 3, Fig. B.3).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **EN 301 349 v.7.5.0** into the **TS 125 322 v.3.1.2**'s RLP frames, with the motivation being to provide the position of the extended use of the second Length Indicator, where the LLC PDU boundary is extended into the next RLC data block.

- Regarding claims 30 and 43, **TS 125 322 v.3.1.2** discloses in Figs. 4.1-4.4 and in the respective portions of the specification about the system ("*mobile communication system*") and method for RLC construction model with the transmitting and receiving entities for transparent, unacknowledged and acknowledge mode service; wherein the transmitting Tr-entity receives SDUs from the higher layers through the Tr-SAP, UM-SAP, or AM-SAP for segmenting the SDUs into appropriate size sequence RLC PDUs ("*converting data received from the upper layer into data units of the lower layer having fixed size*"; For example see Figs. 4.1-4.4 page 9,

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section 4.2.1: Model of RCL through page 14, section 4.2.1.3: Acknowledge mode entity) with fields in the header such as Data/Control, Sequence Number, Polling bit, Length Indicators or 'LI' (*"first/second length indicators"*), Extension bit, Header Extension Type, etc..., in octet-aligned (For example see Figs. 9.2-9.3; page 20; page 22, Section 9.2.2: Parameters through page 24, Section 9.2.2.10 Padding 'PAD') and wherein the next Length Indicator in the next PDU has value LI = "0" (*"first indicator"*) or LI = "111 1111 1111 1011" (*"second indicator"*) depends on the end of last segment of the SDU that exactly ends of a PDU or one octet short (*"including the second indicator into the following data unit of the lower layer when the end of the last segment of the data unit of the upper layer is included within the current data unit of the lower layer and the first indicator indicating the end of the last segment of the data unit of the upper layer is not included within the current data unit of the lower layer, wherein the second indicator indicates that the end of the last segment of the data unit of the upper layer is included within the current data unit of the lower layer"*) as disclosed in Section 9.2.2.8: Length Indicator 'LI', page 23. TS 125 322 v.3.1.2 does disclose about the use of the next LI in the next PU, when the last segment of the RLC SDU is one octet short of exactly filling the last RLC PU, but fails to explicitly provide the position of the *"first/second length indicators in the current/following data unit"*. However, such implementation is known in the art.

For example, EN 301 349 v.7.5.0 discloses about the use of the Length Indicator where the LLC PDU boundary is extended into the next RLC data block 'N+1' (*"following data unit"*), indicated the end of the LLC PDU 1 (*"current data unit"*) in the RCL data block N+1 (*"second indicator"*); For example see section B.2: Example 2, Fig. B.2) and where the Length Indicator

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can be used when the end of the LLC PDU fits precisely into the RCL data block (*“first indicator”*); For example see section B.3: Example 3, Fig. B.3).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **EN 301 349 v.7.5.0** into the **TS 125 322 v.3.1.2**'s RLP frames, with the motivation being to provide the position of the extended use of the second Length Indicator, where the LLC PDU boundary is extended into the next RLC data block.

- In regard to claims 31 and 44, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), **TS 125 322 v.3.1.2** further discloses about the method of receiving the SDUs from the higher layer through the Tr-SAP, UM-SAP, or AM-SAP (*“service data units or SDUs”*); For example see page 11, Section 4.2.1.1: Transparent mode entities through page 14, Section 4.2.1.3: Acknowledge mode entity).

- Regarding claims 32 and 45, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the use of LI to indicate the last octet of each SDU (*“last octet of each SDU”*); For example see **TS 125 322 v.3.1.2**: page 23, Section 9.2.2.8 Length Indicator ‘LI’; **EN 301 349 v.7.5.0**: Figs. B.1-B.3)

- In regard to claims 33 and 46, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), the combination of

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TS 125 322 v.3.1.2 and **EN 301 349 v.7.5.0** further discloses about the use of the LI in the next RLC data block 'N+1' to indicate the end of the LLC PDU 1 of the RCL data block N ("*second length indicator indicating that the end of the last segment of the data unit of the upper layer ends at the end of the current data unit of the lower layer*"; For example see **EN 301 349 v.7.5.0**: section B.2: Example 2, Fig. B.2).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **EN 301 349 v.7.5.0** into the **TS 125 322 v.3.1.2**'s RLP frames, with the motivation being to provide the position of the extended use of the second Length Indicator, where the LLC PDU boundary is extended into the next RLC data block.

- Regarding claims 34 and 47, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the PDUs ("*protocol data units or PDUs*"; For example see **TS 125 322 v.3.1.2**: page 11, section 4.2.1.1: Transparent mode entities through page 14, section 4.2.1.3: Acknowledge mode entity; **EN 301 349 v.7.5.0**: Figs. B.1-B.7).

- In regard to claims 35-36 and 48-49, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the radio link control layer ("*RLC layer*"; For example see **TS 125 322 v.3.1.2**: page 9, Section 4.2.1: Model of

RCL) is operating in unacknowledged mode PDU or acknowledged mode PDU (“*UMD or AMD*”); For example see **TS 125 322 v.3.1.2**: page 11, Section 4.2.1.1: Transparent mode entities through page 14, Section 4.2.1.3: Acknowledge mode entity; Figs. 9.2-9.3; page 18, section 9.1 Protocol data units through page 20, section 9.2.1.3: AMD PDU).

- Regarding claims 37-38 and 50-51, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the Length Indicator which indicates the end of the SDU occurs in the PDU (“*first length indicator indicating the end of the data unit of the upper layer within the data unit of the lower layer*”); For example see **TS 125 322 v.3.1.2**: pages 23-24, Section 9.2.2.8: Length Indicator ‘LI’; **EN 301 349 v.7.5.0**: section B.2: Example 2, Fig. B.2) and has a value LI = ‘0’ where the previous RLC PDU is exactly filled with the last segment of a RLC SDU (“*second indicator is predefined as ‘0’*”); For example see **TS 125 322 v.3.1.2**: pages 23-24, section 9.2.2.8: Length Indicator ‘LI’; **EN 301 349 v.7.5.0**: section B.2: Example 2, Fig. B.2).

- Regarding claims 39 and 52, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the *second indicator is placed as the first length indicator in the following data unit of the lower layer* (For example see **TS 125 322 v.3.1.2**: pages 23-24, Section 9.2.2.8: Length Indicator ‘LI’; **EN 301 349 v.7.5.0**: section B.2: Example 2, Fig. B.2).

- In regard to claims 41 and 54, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about *padding the remained portion of the current data unit of the lower layer after including the last segment of the data unit of the upper layer* (For example see **TS 125 322 v.3.1.2**: page 24, section 9.2.2.8: Length Indicator ‘LI’ through section 9.2.2.10: Padding ‘PAD’) *and including the predefined third indicator into the current data unit of the lower layer, wherein the predefined third indicator includes padding information (‘padding Length Indicator’; For example see TS 125 322 v.3.1.2: pages 23-24, Section 9.2.2.8: Length Indicator ‘LI’) with respect to the padded portion.*

- Regarding claims 42 and 55, in addition to features in base claims 30 and 43 (see rationales pertaining the rejection of base claims 30 and 43 discussed above), the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses wherein each of the current data unit of the lower layer and the following data unit of the lower layer comprises, the header portion having the data sequence number (For example see **TS 125 322 v.3.1.2**: page 22, section 9.2.2.3: Sequence Number ‘SN’), the indicator portion (**TS 125 322 v.3.1.2**: page 24, section 9.2.2.8: Length Indicator ‘LI’; **EN 301 349 v.7.5.0**: section B.2: Example 2, Fig. B.2) indicating lengths related to the data unit of the upper layer, and the data portion (**TS 125 322 v.3.1.2**: page 24, section 9.2.2.9: Data; **EN 301 349 v.7.5.0**: section B.2: Example 2, Fig. B.2) including the data unit of the upper layer.

Response to Amendment/Arguments

5. Applicant's arguments filed on June 1st, 2005 have been fully considered but they are not persuasive.

Applicant argues that the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** fails to disclose the “*second length indicator indicates that the end of last segment of the data unit is included within the current data unit*”. Examiner respectfully disagrees. The combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** discloses about the system and method for RLC construction model with the transmitting and receiving entities for transparent, unacknowledged and acknowledge mode service; wherein the transmitting Tr-entity receives SDUs from the higher layers through the Tr-SAP, UM-SAP, or AM-SAP for segmenting the SDUs into appropriate size sequence RLC PDUs with fields in the header such as Data/Control, Sequence Number, Polling bit, Length Indicators or ‘LI’ (“*first/second length indicators*”), Extension bit, Header Extension Type, etc..., in octet-aligned (For example see **TS 125 322 v.3.1.2**: Figs. 4.1-4.4 page 9, section 4.2.1: Model of RCL through page 14, section 4.2.1.3: Acknowledge mode entity); and where the first Length Indicator can be used when the end of the LLC PDU fits precisely into the RCL data block (“*first indicator*”; For example see **EN 301 349 v.7.5.0**: section B.3: Example 3, Fig. B.3) and where the next Length Indicator in the next PDU has value LI = “0” (“*first indicator*”) or LI = “111 1111 1111 1011” (“*second indicator*”) depends on the end of last segment of the SDU that exactly ends of a PDU or one octet short as disclosed in **TS 125 322 v.3.1.2**: Section 9.2.2.8: Length Indicator ‘LI’, page 23; and where the Length Indicator is used, when the LLC PDU boundary is extended into the next RLC data block ‘N+1’

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(“*following data unit*”), to indicate the end of the LLC PDU 1 (“*current data unit*”) in the RCL data block N+1 (“*second indicator*”; For example see **EN 301 349 v.7.5.0**: section B.2: Example 2, Fig. B.2). Therefore, Examiner concludes that combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** teaches the arguable feature.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** discloses about the use of the Length Indicator where the LLC PDU boundary is extended into the next RLC data block with the value LI = “0” (“*first indicator*”) or LI = “111 1111 1111 1011” (“*second indicator*”) depends on the end of last segment of the SDU that exactly ends of a PDU or one octet short; especially, in the **EN 301 349 v.7.5.0**: section B.2: Example 2, Fig. B.2, where the length indicator in the RLC data block, e.g. LI = ‘1’, is used to indicate the end of the last LLC PDU within the current RLC data block; and as disclosed in Part 4 above of this Office action.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the

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applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Claims 31-39, 41-42, 44-52, and 54-55 are rejected as in Part 4 above of this Office action and by virtue of their dependence from claims 30 and 43.

Conclusion

6. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tri H. Phan
September 3, 2005



BRIAN NGUYEN
PRIMARY EXAMINER